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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,165	01/14/2002	Kenji Terao	Q68079	5038

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SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER	
GHULAMALI, QUTBUDDIN	
ART UNIT	**PAPER NUMBER**
2637	

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/043,165	TERAO, KENJI	
	Examiner	Art Unit	
	Qutub Ghulamali	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/11,10/30/02,10/2*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 16 is objected to because of the following informalities: Line 2 recites "a pass search", whereas it should be -- a path search --. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 7-9, and 11-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hiramatsu (USP 6,498,928).

Regarding claim 1, Hiramatsu discloses a CDMA receiver perform a path search with a prescribed timing: a delay profile indicating a signal power distribution with respect to delay times of received signals (abstract; col. 6, lines 46-53), wherein said delay profile is divided into a plurality of regions (col. 8, lines 32-34), based on said delay time, said searching done at the respective timing being performed so as to determine a power distribution condition for at least one selected region (col. 6, lines 59-64), said regions being selected for the purpose of searching

each one of the respective regions with a different frequency from each other, based on said power distribution of said regions (col. 7, lines 1-26).

With reference to claims 2, 14 Hiramatsu discloses said searching searches for a peak power within said each one of said regions, and wherein a region is selected so that the higher peak power a region possessing, with the higher frequency can be selected (figs. 6A-B; col. 4, line67; col. 5, lines 1-4).

Regarding claim 3, Hiramatsu discloses a peak power used in setting said selection frequency of said regions is a total of a plurality of peak powers within said region (col. 6, lines 59-64).

Regarding claim 4, Hiramatsu discloses searching is performed with regard to one region at each one of said respective timings (delay profile) (col. 6, lines 46-48), so as to form at least one cycle in which searching is performed for all regions, with a prescribed number of timings, and wherein a selection frequency of the respective regions is represented as a difference in the number of searchings for each one of the regions and performed within one cycle (col. 6, lines 46-67).

Regarding claim 5, Hiramatsu discloses each one of said regions comprises time periods that are either equal to or different from each other (col. 1, lines 13-21; col. 7, lines 1-10).

Regarding claim 7, Hiramatsu discloses said regions are classified into important regions, which are regions including a relatively large peak power, and non-important regions, which are other regions, and wherein a selection frequency of said important region is made high, and a selection frequency of said non-important regions is made low (col. 3, lines 30-36).

Regarding claims 8, 15 Hiramatsu discloses control is performed so that, in a case in which said peak power used in classification into said important regions and said non-important regions, when path information corresponding to one peak power within a region is assigned to a finger, a region Including said one peak power is included in said important regions, and when path information corresponding to one peak power within a region is not assigned to a finger, a region including said one peak power is removed (isolated) from said important regions (col. 3, lines 29-36; col. 4, lines 11-26).

Regarding claim 9, Hiramatsu discloses respective multiplier is applied to each one of the detected peak powers in all respective regions in order that the higher peak power a region among all of the regions possessing, the larger multiplier is assigned, and a total of said peak powers in each of said regions is determined (col. 4, lines 11-41).

Regarding claim 11, Hiramatsu discloses weighting is performed so as to weight a region greater, the higher is a selection frequency of said region, in taking a peak power total (col. 1, lines 35-54).

As per claims 12, 13, Hiramatsu discloses performing a path search comprising:
a separating (dividing) means, which divides said delay profile into a plurality of regions based on said delay time, and which separates at least one of said selected region of said delay profile at the respective timings (col. 8, lines 32-34);
a detection means, which performs detection within said separated region, and determines a power distribution condition (col. 6, lines 4-23; col. 7, lines 1-26);
a priority establishing means, which establishes a priority of a region (directivity) in response to said power distribution condition (col. 3, lines 15-26).; and

a region designation means, which designates a region to be selected as an object to be separated in said separating means so that the higher priority region, with the higher frequency can be selected (col. 1, lines 12-21).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6, 10, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu (USP 6,498,928) in view of Matsuoka et al (USP 6,771,988).

Regarding claim 6, Hiramatsu discloses every feature of the claimed invention of claims 1, 5. Hiramatsu, however, is silent regarding an overlapped time period in each of said region with respect to the neighboring region thereto. Matsuoka in a similar field of endeavor discloses an overlapped time period in each of said region (beams) overlap each other (col. 8, lines 52-56). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use overlapped time period in each of said region with respect to the neighboring region as taught by Matsuoka in the system of Hiramatsu because it can enhance the SNR reception at the terminal station.

Regarding claim 10, Hiramatsu discloses every feature of the claimed invention of claims 1, 3. Hiramatsu however, is silent regarding taking an average of one or more of the respective peak powers. Matsuoka in a similar field of endeavor discloses taking an average of one or more

of the respective peak powers obtained by one or more searching of said regions (col. 2, lines 1-18). It would have been obvious to one skilled in the art at the time the invention was made to use an average of the total power as taught by Matsuoka in the system of Hiramatsu because it can reduce the weighting averages and consequently minimize distortion in plurality of received signals.

As per claim 16, assigning step being performed by a computer program is a design choice, which can be implemented easily via programming algorithm.

As per claim 17, the steps claimed as program method is nothing more than restating the function of the specific components of the apparatus as claimed above and therefore, it would have been obvious, considering the aforementioned rejection for the claim 1.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

Ziv et al (USP 5,710,768) shows a method of searching for a burst signal.

Bannasch et al (USP 6,628,724) discloses a process and system for information transfer

Takashi et al (USP 6,754,255) discloses a mobile terminal communication apparatus and synchronization method.

Foreign Reference:

Benny Vejigaard (EP 1154585) discloses a receiver for a communication device for a multi-path channel.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.
March 18, 2005.

JAY K. PATEL
SUPERVISORY PATENT EXAMINER